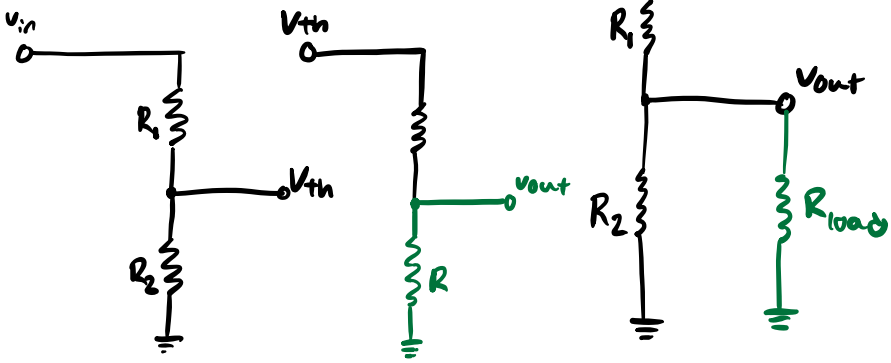
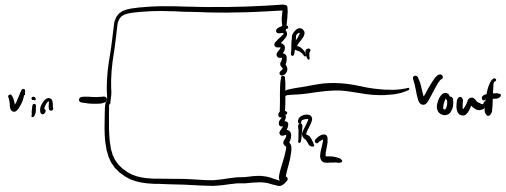
8-24-17
261 Lab Lecture

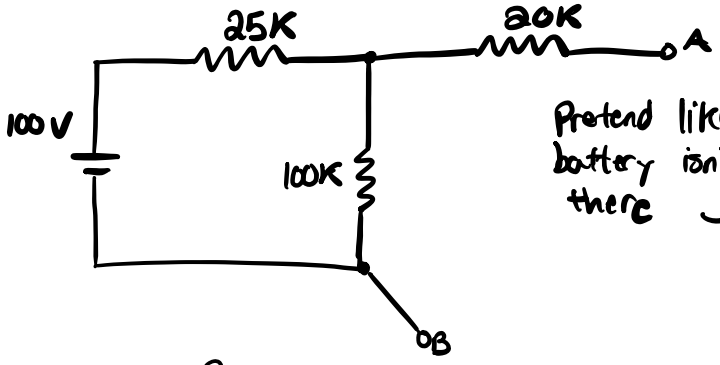


$$V_{th} = \frac{V_{in} R_2}{R_1 + R_2}$$

$$I = \frac{V_{in}}{R_1}$$



Ex:



Pretend like battery isn't there

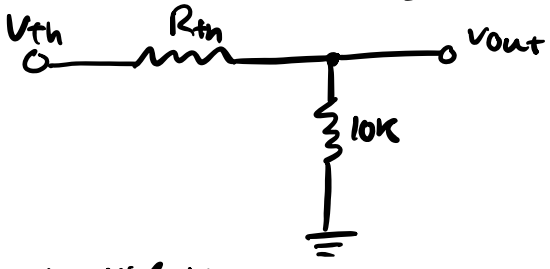
$$V_A = 100V \cdot \frac{100K}{125K} = 80V$$

$$R_{th} = \left(\frac{1}{25K} + \frac{1}{100K}\right)^{-1} + 20K$$

$$= \left(\frac{25K + 100K}{2500K^2}\right)^{-1} + 20K$$

$$= \left(\frac{125K}{2500K^2}\right)^{-1} + 20K$$

$$R_{th} = 20K + 20K = 40K$$



$$V_{out} = \frac{10K \cdot V_{th}}{R_{th} + 10K}$$

$$V_{th} = I\,(R_{th} + 10K)$$